SEQUENCE LISTING

- <110> Katherine Galvin and Laura A. Rudolph-Owen
- <120> METHODS AND COMPOSITIONS FOR THE DIAGNOSIS AND TREATMENT OF CARDIOVASCULAR AND TUMORIGENIC DISEASE USING 4941
- <130> MNI-094
- <140> 09/635,521
- <141> 2000-08-09
- <150> 60/199,908
- <151> 2000-04-26
- <160> 3
- <170> PatentIn Ver. 2.0
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- <211> 1362
- <212> DNA
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 Met Ala Ser Pro Ser Leu Pro Gly Ser Asp Cys Ser Gln Ile Ile Asp

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- cac agt cat gtc ccc gag ttt gag gtg gcc acc tgg atc aaa atc acc 96
 His Ser His Val Pro Glu Phe Glu Val Ala Thr Trp Ile Lys Ile Thr
 20 25 30
- ctt att ctg gtg tac ctg atc atc ttc gtg atg ggc ctt ctg ggg aac 144
 Leu Ile Leu Val Tyr Leu Ile Ile Phe Val Met Gly Leu Leu Gly Asn
 35 40 45
- agc gcc acc att cgg gtc acc cag gtg ctg cag aag aaa gga tac ttg

 Ser Ala Thr Ile Arg Val Thr Gln Val Leu Gln Lys Lys Gly Tyr Leu

 50
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- cag aag gag gtg aca gac cac atg gtg agt ttg gct tgc tcg gac atc

 Gln Lys Glu Val Thr Asp His Met Val Ser Leu Ala Cys Ser Asp Ile

 70

 75

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- ttg gtg ttc ctc atc ggc atg ccc atg gag ttc tac agc atc atc tgg 288
 Leu Val Phe Leu Ile Gly Met Pro Met Glu Phe Tyr Ser Ile Ile Trp
 85 90 95
- aat ccc ctg acc acg tcc agc tac acc ctg tcc tgc aag ctg cac act
 Asn Pro Leu Thr Thr Ser Ser Tyr Thr Leu Ser Cys Lys Leu His Thr
 100 105 110

| ttc Phe | ctc Leu | ttc Phe 115 | gag Glu | gcc Ala | tgc Cys | Ser | tac Tyr 120 | gct Ala | acg Thr | ctg Leu | ъец | cac His 125 | gtg Val | ctg Leu | aca Thr | 384 |
|-------------------|---------------------|--------------------|-------------------|--------------------|----------------------|-----------------------|-----------------------|-------------------|--------------------|--------------------|---------------------|-----------------------|-------------------|--------------------|-----------------------|------|
| ctc Leu | agc Ser 130 | ttt Phe | gag Glu | cgc Arg | Tyr | atc Ile 135 | gcc Ala | atc Ile | tgt Cys | cac His | ccc Pro 140 | ttc Phe | agg Arg | tac Tyr | aag Lys | 432 |
| gct Ala 145 | gtg Val | tcg Ser | gga Gly | cct Pro | tgc Cys 150 | cag Gln | gtg Val | aag Lys | ctg Leu | ctg Leu 155 | att Ile | ggc Gly | ttc Phe | gtc Val | tgg Trp 160 | 480 |
| gtc Val | acc Thr | tcc Ser | gcc Ala | ctg Leu 165 | gtg Val | gca Ala | ctg Leu | ccc Pro | ttg Leu 170 | ctg Leu | ttt Phe | gcc Ala | atg Met | ggt Gly 175 | act Thr | 528 |
| gag Glu | tac Tyr | ccc Pro | ctg Leu 180 | gtg Val | aac Asn | gtg Val | ccc Pro | agc Ser 185 | cac His | cgg Arg | ggt Gly | ctc Leu | act Thr 190 | tgc Cys | aac Asn | 576 |
| cgc Arg | tcc Ser | agc Ser 195 | Thr | cgc Arg | cac His | cac His | gag Glu 200 | cag Gln | ccc Pro | gag Glu | acc Thr | tcc Ser 205 | aat Asn | atg Met | tcc Ser | 624 |
| atc Ile | tgt Cys 210 | Thr | aac Asn | ctc Leu | tcc Ser | agc Ser 215 | cgc Arg | tgg Trp | acc Thr | gtg Val | ttc Phe 220 | cag Gln | tcc Ser | agc Ser | atc Ile | 672 |
| ttc Phe 225 | Gly | gco Ala | ttc Phe | gtg Val | gtc Val 230 | Tyr | ctc Leu | gtg Val | gtc Val | ctg Leu 235 | гьеп | tcc Ser | gta Val | gcc Ala | ttc Phe 240 | 720 |
| atg Met | tgc Cys | tgg Tr | g aac Asr | atg Met 245 | . Met | cag Gln | gtg Val | ctc Leu | atg Met 250 | . Буг | ago Ser | cag Gln | aag Lys | ggc Gly 255 | 501 | 768 |
| cto | ı Ala | ggg a Gl | y Gl | c acc y Thr | Arg | Pro | Pro | GIT | тег | g ago | g aaq g Lys | g tcc s Ser | gag Glu 270 | 1 501 | gaa Glu | 816 |
| gaq Gl: | g ago ı Se: | c ag r Ar 27 | g Th | c gco r Ala | e ago a Aro | g ago | g caq g Gl: 280 | נמדר ב | ato Ile | e ato | e Phe | c cto e Leu 285 | 1 TI | g cto g Lei | g att 1 Ile | 864 |
| gt: Va | t gte 1 Va 29 | l Th | a tt r Le | g gco u Ala | c gta a Val | a tgo l Cy: 29: | s Tr | g ato | g cco | c aa o As: | c ca n Gl: 30 | 11 TT | t cgo | g ago | g atc g Ile | 912 |
| at Me 30 | t Al | t gc a Al | g gc a Al | c aa a Ly | a cco s Pro 31 | о Гу | g ca s Hi | c ga s As | c tg p Tr | g ac p Th 31 | r Ar | g tc g Se: | c ta r Ty | c tte r Ph | c cgg e Arg 320 | 960 |
| gc Al | g ta a Ty | c at r Me | g at et Il | c ct e Le 32 | u Le | c cc u Pr | c tt o Ph | c tc e Se | g ga r Gl 33 | u Th | g tt r Ph | t tt e Ph | c ta e Ty | c ct r Le 33 | c agc u Ser 5 | 1008 |

| tcg gtc atc aac ccg ctc ctg tac acg gtg tcc tcg cag cag ttt cgg Ser Val Ile Asn Pro Leu Leu Tyr Thr Val Ser Ser Gln Gln Phe Arg 340 345 350 | 1056 |
|---|------|
| cgg gtg ttc gtg cag gtg ctg tgc tgc cgc ctg tcg ctg cag cac gcc Arg Val Phe Val Gln Val Leu Cys Cys Arg Leu Ser Leu Gln His Ala 355 360 365 | 1104 |
| aac cac gag aag cgc ctg cgc gta cat gcg cac tcc acc acc gac agc Asn His Glu Lys Arg Leu Arg Val His Ala His Ser Thr Thr Asp Ser 370 375 380 | 1152 |
| gcc cgc ttt gtg cag cgc ccg ttg ctc ttc gcg tcc cgg cgc cag tcc Ala Arg Phe Val Gln Arg Pro Leu Leu Phe Ala Ser Arg Arg Gln Ser 385 | 1200 |
| tct gca agg aga act gag aag att ttc tta agc act ttt cag agc gag Ser Ala Arg Arg Thr Glu Lys Ile Phe Leu Ser Thr Phe Gln Ser Glu 405 410 415 | 1248 |
| gcc gag ccc cag tct aag tcc cag tca ttg agt ctc gag tca cta gag Ala Glu Pro Gln Ser Lys Ser Gln Ser Leu Ser Leu Glu Ser Leu Glu 420 425 430 | 1296 |
| ccc aac tca ggc gcg aaa cca gcc aat tct gct gca gag aat ggt ttt Pro Asn Ser Gly Ala Lys Pro Ala Asn Ser Ala Ala Glu Asn Gly Phe 435 440 445 | 1344 |
| cag gag cat gaa gtt tga Gln Glu His Glu Val 450 | 1362 |
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| His Ser His Val Pro Glu Phe Glu Val Ala Thr Trp Ile Lys Ile Thr 20 25 30 | |
| Leu Ile Leu Val Tyr Leu Ile Ile Phe Val Met Gly Leu Leu Gly Asn 35 40 45 | |
| Ser Ala Thr Ile Arg Val Thr Gln Val Leu Gln Lys Lys Gly Tyr Leu 50 60 | |
| Gln Lys Glu Val Thr Asp His Met Val Ser Leu Ala Cys Ser Asp Ile 65 70 75 80 | |
| Leu Val Phe Leu Ile Gly Met Pro Met Glu Phe Tyr Ser Ile Ile Trp 85 90 95 | |

Asn Pro Leu Thr Thr Ser Ser Tyr Thr Leu Ser Cys Lys Leu His Thr 105 Phe Leu Phe Glu Ala Cys Ser Tyr Ala Thr Leu Leu His Val Leu Thr 120 Leu Ser Phe Glu Arg Tyr Ile Ala Ile Cys His Pro Phe Arg Tyr Lys 135 Ala Val Ser Gly Pro Cys Gln Val Lys Leu Leu Ile Gly Phe Val Trp 155 Val Thr Ser Ala Leu Val Ala Leu Pro Leu Leu Phe Ala Met Gly Thr 170 Glu Tyr Pro Leu Val Asn Val Pro Ser His Arg Gly Leu Thr Cys Asn Arg Ser Ser Thr Arg His His Glu Gln Pro Glu Thr Ser Asn Met Ser 200 Ile Cys Thr Asn Leu Ser Ser Arg Trp Thr Val Phe Gln Ser Ser Ile 215 Phe Gly Ala Phe Val Val Tyr Leu Val Val Leu Leu Ser Val Ala Phe 235 230 Met Cys Trp Asn Met Met Gln Val Leu Met Lys Ser Gln Lys Gly Ser 250 245 Leu Ala Gly Gly Thr Arg Pro Pro Gln Leu Arg Lys Ser Glu Ser Glu 265 Glu Ser Arg Thr Ala Arg Arg Gln Thr Ile Ile Phe Leu Arg Leu Ile 280 Val Val Thr Leu Ala Val Cys Trp Met Pro Asn Gln Ile Arg Arg Ile 295 Met Ala Ala Ala Lys Pro Lys His Asp Trp Thr Arg Ser Tyr Phe Arg 315 Ala Tyr Met Ile Leu Leu Pro Phe Ser Glu Thr Phe Phe Tyr Leu Ser 330 Ser Val Ile Asn Pro Leu Leu Tyr Thr Val Ser Ser Gln Gln Phe Arg 345 Arg Val Phe Val Gln Val Leu Cys Cys Arg Leu Ser Leu Gln His Ala 355 Asn His Glu Lys Arg Leu Arg Val His Ala His Ser Thr Thr Asp Ser 375 Ala Arg Phe Val Gln Arg Pro Leu Leu Phe Ala Ser Arg Arg Gln Ser 395 390

| | la Arg | Arg | Thr 405 | Glu | Lys | Ile | Phe | Leu 410 | Ser | Thr | Phe | Gln | Ser 415 | Glu | |
|--|---|--|---|--|--|--|--|---|--|---|--|---|---|--|-------------------|
| Ala Gl | lu Pro | Gln 420 | Ser | Lys | Ser | Gln | Ser 425 | Leu | Ser | Leu | Glu | Ser 430 | Leu | Glu | |
| Pro As | sn Ser 435 | | Ala | Lys | Pro | Ala 440 | Asn | Ser | Ala | Ala | Glu 445 | Asn | Gly | Phe | |
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| <220> <223> | N at Guani | | | | | | | nay h | oe Ad | denir | ne, | | | | |
| <400> gggagt | | ccac | gegto | ce gọ | gtago | cctgo | g tgo | eteti | ttct | c at | ig go et Al | ct to la Se | ca co er Pi | cc agc co Ser 5 | 56 |
| a+ a a | | | | | | | | | | | | | | | |
| Leu Pi | cg ggo ro Gly | agt Ser | gac Asp 10 | tgc Cys | tcc Ser | caa Gln | atc Ile | att Ile 15 | gat Asp | cac His | agt Ser | cat His | gtc Val 20 | ccc Pro | 104 |
| Leu Progag to | ro Gly tt gag | Ser gtg | Asp 10 gcc | Cys | Ser tgg | Gln | Ile | Ile 15 atc | Asp | His | Ser | His ctg | Val 20 gtg | Pro tac | 104 |
| Leu Progag to | ro Gly tt gag he Gly tc atc | y Ser y gtg y Val 25 c ttc | Asp 10 gcc Ala gtg | Cys acc Thr | Ser tgg Trp | Gln atc Ile | aaa Lys 30 | Ile 15 atc Ile | acc Thr | His ctt Leu agc | Ser att Ile gcc | His ctg Leu 35 | Val 20 gtg Val att | Pro tac Tyr | |
| gag to Glu Plant Ctg a Leu I. | tt gag he Gli tc atc le Ile cc cac | y Ser y gtg y Val 25 c ttc e Phe | Asp 10 gcc Ala gtg Val | acc Thr atg Met | tgg Trp ggc Gly | atc Ile ctt Leu 45 | aaa Lys 30 ctg Leu | <pre>11e 15 atc Ile ggg Gly tac</pre> | acc Thr aac Asn | His ctt Leu agc Ser | att Ile gcc Ala 50 | ttg Leu 35 acc Thr | Val 20 gtg Val att Ile | Pro tac Tyr cgg Arg | 152 |
| gag to Glu Plots at Leu I. | tt gag he Glu tc atc le Ile 40 cc cac hr Glu 55 | y Ser y gtg y Val 25 c ttc e Phe y gtg y Val | Asp 10 gcc Ala gtg Val ctg Leu | acc Thr atg Met cag Gln | tgg Trp ggc Gly aag Lys 60 | Gln atc Ile ctt Leu 45 aaa Lys | aaa Lys 30 ctg Leu gga Gly | Ile 15 atc Ile ggg Gly tac Tyr | acc Thr aac Asn ttg Leu | His ctt Leu agc Ser cag Gln 65 | ser att Ile gcc Ala 50 aag Lys gtg | His ctg Leu 35 acc Thr gag Glu | Val 20 gtg Val att Ile gtg Val | Pro tac Tyr cgg Arg aca Thr | 152 200 |
| gag to Glu Plots at Leu I. gtc ac Val T. gac c Asp H 70 ggc a | tt gag he Glu tc atc le Ile 40 cc cac hr Glu 55 | y Ser y gtg y Val 25 c ttc e Phe y gtg y Val gtg y Val c atg | Asp 10 gcc Ala gtg Val ctg Leu agt Ser | acc Thr atg Met cag Gln ttg Leu 75 | tgg Trp ggc Gly aag Lys 60 gct Ala | Gln atc Ile ctt Leu 45 aaa Lys tgc Cys agc | aaa Lys 30 ctg Leu gga Gly tcg Ser | Ile 15 atc Ile ggg Gly tac Tyr gac Asp | acc Thr aac Asn ttg Leu atc Ile 80 | His ctt Leu agc Ser cag Gln 65 ttg Leu aat | ser att Ile gcc Ala 50 aag Lys gtg Val ccc | ttc Phe | Val 20 gtg Val att Ile gtg Val ctc Leu | Pro tac Tyr cgg Arg aca Thr atc Ile 85 acg | 152 200 248 |

| tgc Cys | agc Ser | tac Tyr 120 | gct Ala | acg Thr | ctg Leu | ctg Leu | cac His 125 | gtg Val | ctg Leu | aca Thr | ctc Leu | agc Ser 130 | ttt Phe | gag Glu | cgc Arg | 440 |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| tac Tyr | atc Ile 135 | gcc Ala | atc Ile | tgt Cys | cac His | ccc Pro 140 | ttc Phe | agg Arg | tac Tyr | aag Lys | gct Ala 145 | gtg Val | tcg Ser | gga Gly | cct Pro | 488 |
| tgc Cys 150 | cag Gln | gtg Val | aag Lys | ctg Leu | ctg Leu 155 | att Ile | ggc Gly | ttc Phe | gtc Val | tgg Trp 160 | gtc Val | acc Thr | tcc Ser | gcc Ala | ctg Leu 165 | 536 |
| gtg Val | gca Ala | ctg Leu | ccc Pro | ttg Leu 170 | ctg Leu | ttt Phe | gcc Ala | atg Met | ggt Gly 175 | act Thr | gag Glu | tac Tyr | ccc Pro | ctg Leu 180 | gtg Val | 584 |
| aac Asn | gtg Val | ccc Pro | agc Ser 185 | cac His | cgg Arg | ggt Gly | ctc Leu | act Thr 190 | tgc Cys | aac Asn | cgc Arg | tcc Ser | agc Ser 195 | acc Thr | cgc Arg | 632 |
| cac His | cac His | gag Glu 200 | cag Gln | ccc Pro | gag Glu | acc Thr | tcc Ser 205 | aat Asn | atg Met | tcc Ser | atc Ile | tgt Cys 210 | acc Thr | aac Asn | ctc Leu | 680 |
| tcc Ser | agc Ser 215 | cgc Arg | tgg Trp | acc Thr | gtg Val | ttc Phe 220 | cag Gln | tcc Ser | agc Ser | atc Ile | ttc Phe 225 | ggc Gly | gcc Ala | ttc Phe | gtg Val | 728 |
| gtc Val 230 | tac Tyr | ctc Leu | gtg Val | gtc Val | ctg Leu 235 | ctc Leu | tcc Ser | gta Val | gcc Ala | ttc Phe 240 | atg Met | tgc Cys | tgg Trp | aac Asn | atg Met 245 | 776 |
| atg Met | cag Gln | gtg Val | ctc Leu | atg Met 250 | aaa Lys | agc Ser | cag Gln | aag Lys | ggc Gly 255 | tcg Ser | ctg Leu | gcc Ala | ggg | ggc Gly 260 | acg Thr | 824 |
| cgg Arg | cct Pro | Pro | Gln | Leu | agg Arg | Lys | Ser | Glu | Ser | Glu | Glu | Ser | agg Arg 275 | Thr | gcc Ala | 872 |
| agg Arg | agg Arg | cag Gln 280 | Thr | atc Ile | atc Ile | ttc Phe | ctg Leu 285 | Arg | ctg Leu | att Ile | gtt Val | gtg Val 290 | aca Thr | ttg Leu | gcc Ala | 920 |
| gta Val | tgc Cys 295 | Trp | atg Met | ccc | aac Asn | cag Gln 300 | Ile | cgg Arg | agg Arg | atc Ile | atg Met 305 | Ala | gcg Ala | gcc Ala | aaa Lys | 968 |
| ccc Pro 310 | Lys | cac His | gac Asp | tgg Trp | acg Thr 315 | agg Arg | tcc Ser | tac Tyr | ttc Phe | cgg Arg 320 | Ala | tac Tyr | atg Met | atc : Ile | ctc Leu 325 | 1016 |
| ctc Leu | ccc Pro | ttc Phe | tcg Ser | gag Glu 330 | Thr | ttt Phe | tto Phe | tac Tyr | cto Leu 335 | Ser | tcg Ser | gtc Val | atc | aac Asn 340 | ccg Pro | 1064 |

| ctc ctg tac Leu Leu Tyr | acg gt Thr Va 345 | ig tcc al Ser | tcg Ser | Gln | cag Gln 350 | ttt Phe | cgg Arg | cgg Arg | gtg Val | ttc Phe 355 | gtg Val | | 1112 |
|--|--|---|--|--|--|---|--|--------------------------|------------------------------------|----------------------------------|---|---|--|
| gtg ctg tgc Val Leu Cys 360 | s Cys A | gc ctg rg Leu | tcg Ser | ctg Leu 365 | cag Gln | cac His | gcc Ala | aac Asn | cac His 370 | gag Glu | aag Lys | cgc Arg | 1160 |
| ctg cgc gta Leu Arg Val 375 | a cat go l His A | cg cac la His | tcc Ser 380 | acc Thr | acc Thr | gac Asp | agc Ser | gcc Ala 385 | cgc Arg | ttt Phe | gtg Val | | 1208 |
| cgc ccg tto Arg Pro Let 390 | g ctc t u Leu P | tc gcg he Ala 395 | tcc Ser | cgg Arg | cgc Arg | cag Gln | tcc Ser 400 | tct Ser | gca Ala | agg Arg | aga Arg | act Thr 405 | 1256 |
| gag aag at Glu Lys Il | e Phe L | ta agc eu Ser 10 | act | ttt Phe | cag Gln | agc Ser 415 | gag Glu | gcc Ala | gag Glu | ccc Pro | cag Gln 420 | tct Ser | 1304 |
| aag too ca Lys Ser Gl | g tca t n Ser L 425 | tg agt eu Ser | ctc Leu | gag Glu | tca Ser 430 | cta Leu | gag Glu | ccc Pro | aac Asn | tca Ser 435 | ggc Gly | gcg Ala | 1352 |
| aaa cca gc Lys Pro Al 44 | a Asn S | ct gct er Ala | gca Ala | gag Glu 445 | aat Asn | ggt Gly | ttt Phe | cag Gln | gag Glu 450 | cat His | gaa Glu | gtt Val | 1400 |
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| ctctcactct | gcagto | tcaa a | ctat | gccc | c ca | tcag | ggat | gga | atgg | aca | ctgg | aggctt | 1520 |
| tacaaaaggc | agatgo | ccac c | tcag | tgact | t to | | | ~~~ | tcta | 000 | acat. | + | 1580 |
| | | | | | | taag | gact | yac | cccg | cca | geet | ggeerr | |
| gactccggtt | acacag | acat g | gggg | | | | | | | | | | |
| gactccggtt actgaaaatt | | | | tgaa | c tt | tcac | tcca | cct | cctt | cct | tcaa | gtacat | 1640 |
| | cagtca | agct g | aatt | tgaa tatt | c tt | tcac aatg | tcca cttt | cct | cctt gagc | cct tct | tcaa ttca | gtacat ttattt | 1640 1700 |
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| actgaaaatt gcacaggaac aagaaactca | cagtea aaaaga ctcagg | aget g agaac a ggagg t ceage t | aatt cgga gggg | tgaad tatto ctcc ggtto cagt | c tt c ag c gc g gg g tg | tcac aatg tccc ggcg ccga | tcca cttt tacc aggg gaag | cct acc cag ctg | cctt gagc aata gaag | cct tct aaa aac att | tcaa ttca ggac aatg tgag | gtacat ttattt acccag caggag gaacag | 1640 1700 1760 1820 1880 |
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